



US Army Corps
of Engineers®

Engineer Research and
Development Center

Construction Engineering Research Laboratory

Description

The Construction Engineering Research Laboratory (CERL) develops and infuses innovative technologies to provide excellent facilities and realistic training lands for the Department of Defense (DoD). Products and services from CERL research enhance the Army's ability to design, build, operate, and maintain its installations and to ensure environmental quality at the lowest life-cycle cost.

CERL is part of the US Army Engineer Research and Development Center (ERDC). CERL researchers work in collaboration with experts at the other ERDC sites as well as with multiple partners in government, industry, and academia. The CERL program centers around customer-identified business areas: Facilities Acquisition and Revitalization; Installation Operations; and Military Lands.

Military Lands serve as power projection platforms for defending the United States and its allies. Installations are also home to the force, existing as small cities with supporting infrastructures. Training and testing lands are essential to providing a trained and ready Army capable of victory anywhere at any time.

CERL R&D is critical to the Army Transformation in addressing new installation requirements for the Interim and Objective Forces. Increased demands on land, facilities, and the continued focus on soldiers' quality of life all require affordable technology solutions.

Many technologies developed at CERL also find application in the private and public sectors, where no similar R&D capability exists.

Capabilities

As the owner of some 1 billion square feet of buildings, the Army must ensure that its facilities are cost-effective, durable, environmentally sustainable, and flexible enough to support changing missions. Army facilities must provide quality living, working and training environments for soldiers and their families. CERL research in *Facilities Acquisition and Revitalization* focuses on design, materials, and delivery of facilities. It includes structural and seismic design, advanced construction materials, design/construction management tools, specific-use facilities, electromagnetic pulse shielding, rehabilitation and revitalization of existing facilities, and base camp planning.

More than 11 percent of the Army budget goes toward operating and maintaining installations, yet the backlog of maintenance and repair for DoD topped \$50 billion in 2000. Compounding the challenge for Directors of Public Works has been rapid and dramatic downsizing, which has left fewer staff to handle the workload.

CERL research in ***Installation Operations*** focuses on improving the efficiency of business practices and operations, maintenance, and repair (OM&R) activities performed by DPWs to offset reductions in manpower and funding. These improvements will be achieved by using innovative technologies, expanding automation, and streamlining business processes. DPW functions targeted by this research include: master planning; programming facility OM&R; DPW work management; industrial process and utility operations; maintenance and repair processes; change management; environmental compliance and pollution prevention; energy supply/conservation; and support for power projection and mobilization.

DoD uses over 25 million acres of land plus extensive areas of sea and air space in support on military training and testing missions. Sustaining these resources is critical for military readiness. However, resource degradation and environmental constraints within the fence line and developmental pressures surrounding installations combine to compromise and limit training and testing activities on military lands.

CERL research in ***Military Lands*** has two goals: provide knowledge, tools and improved practices to support sustained military use of lands, seas, and airspace; and support military stewardship of natural and cultural resources on these lands. This research enhances and expands an understanding of the impacts training and testing activities have on resources.

To meet its research challenges, CERL has state-of-the-art test facilities that include the Triaxial Earthquake and Shock Simulator; the Paint Technology Center; a Controlled Archeological Test Site; Heating, Ventilation, and Air Conditioning Test Facility; and an Environmental Chemistry Laboratory.

Point of Contact

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